Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-9. (Canceled).

10. (Original) A wireless time division duplex communication system using code division multiple access, the system communicating using communication bursts, each communication burst having a unique channelization code and a midamble code, the system comprising:

a base station having:

a plurality of data generators for generating data to be communicated to user equipments;

a plurality of spreading and modulation devices, operatively coupled to the data generators, for producing communication bursts in a time slot with the generated data, each produced communication burst having a midamble code which is associated with its channelization code; and

a combiner and an antenna for combining and transmitting the communication bursts in the time slot;

a plurality of user equipments, at least one having:

an antenna for receiving the communication bursts;

a midamble detection device for determining each received midamble code;

a logic block for determining a channelization code associated with each received midamble; and

a multiuser detection device for recovering data from the received communication bursts based on in part the determined channelization codes.

11. (Original) The system of claim 10 wherein the midamble codes are associated with the channelization codes based on a mapping between the midamble and channelization codes.

12. (Original) The system of claim 11 wherein each midamble code is mapped to one channelization code.

13. (Original) The system of claim 11 wherein at least one midamble code is mapped to a plurality of channelization codes.

14. (Original) The system of claim 10 further comprising a channelization code detection block, operatively coupled to the logic block, for detecting channelization codes based on in part the determined associated channelization codes.

15.   (Original) The system of claim 14 wherein the channelization code detection block only detects for the determined associated channelization codes.

16.   (Original) The system of claim 15 wherein the channelization code detection block comprises a plurality of matched filters, each matched filter matched to one of the associated channelization codes and an associated channel response.

17.   (Original) The system of claim 10 further comprising a channel estimation device using received midambles of the received bursts for channel estimation, the channel estimation is used by the midamble detection device, the channelization code detection device and the multiuser detection device.

18.   (Original) A wireless time division duplex communication system using code division multiple access, the system communicating using communication bursts, each communication burst having a unique channelization code and a midamble code, the system comprising:

a base station having:

a plurality of data generators for generating data to be communicated to user equipments;

a plurality of spreading and modulation devices, operatively coupled to

the data generators, for producing communication bursts in a time slot with the generated data, each produced communication burst having a midamble code which is associated with information of the channelization codes of the produced bursts; and

a combiner and an antenna for combining and transmitting the communication bursts in the time slot;

a plurality of user equipments, at least one having:

an antenna for receiving the communication bursts;

a midamble detection device for determining each received midamble code;

a logic block for determining the channelization code information associated with each received midamble;

a channelization code detection block, operatively coupled to the logic block, for detecting channelization codes based on in part the determined channelization code information; and

a multiuser detection device for recovering data from the received communication bursts based on in part the determined channelization codes.

19.   (Currently amended) The system of claim 18 10 further comprising a channel estimation device using received midambles of the received bursts for channel estimation, the channel estimation is used by the midamble detection device, the channelization code detection device and the multiuser detection device.

20.   (Original) The system of claim 19 wherein each midamble code is uniquely associated with a shift of a base midamble code.

21.   (Original) The system of claim 19 wherein the channelization code information is a transmitted channelization code.

22.   (Original) The system of claim 19 wherein the channelization code information is a number of transmitted channelization codes.